RESEARCH AND WORKING PAPERS ▫ 17

THE IMPACT OF DISTRIBUTION ACTIVITIES ON THE CANADIAN URBAN SYSTEM

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PREFACE

The University of Winnipeg was the location of a major national urban studies conference, hosted by the Institute of Urban Studies in August 1985. The "Canadian Urban Studies Conference" addressed the general theme of "The Canadian Urban Experience - Past and Present." More than ninety specialists spoke during forty separate sessions on such topics as housing and the built environment, economic and community development, planning and urban form, women and the urban environment, and urban government and politics.

This publication is a result of the Canadian Studies Conference. The Institute of Urban Studies is publishing many of the papers presented at the conference in the Institute's publication series. Some of the papers will also appear in the scholarly journal, the Urban History Review/ Revue d'histoire urbaine and in book form.

This conference represented a major effort on the part of the Institute of Urban Studies in terms of fulfilling its role as a national centre of excellence in the urban studies and housing fields.

Alan F.J. Artibise
Director.

TABLE OF CONTENTS

Preface		iii
Table of Contents		v
List of Tables		vi
List of Figures		vii
Section		**Page**
1.0	INTRODUCTION	1
2.0	THE DATA	1
3.0	GROWTH AND CHANGE	5
4.0	THE BUSINESS GROUPS	8
5.0	THE SPATIAL PATTERN OF GROWTH	10
6.0	CONVERGENCE OF THE RETAIL HIERARCHY	12
7.0	RECENT TRENDS	16
8.0	THE FUTURE	21
NOTES		23

LIST OF TABLES

Table		Page
1	Labour Force by Major Sectors, 1931-1981 (1000's)	2
2	The Growth of Distribution Activity	6
3	Differential Growth by Commercial Group (Sales in 1971 Dollars)	9
4	A Case Study of Convergence of Distribution Activity	13
5	Distribution Employment and City Size	15
6	Growth and the Urban Hierarchy, 1971-1981	18

LIST OF FIGURES

Figure		Page
1	The Distribution Hierarchy: 1981	4
2	Growth of the Canadian Market	7
3	Growth of Distribution Activity: 1931-1971	11
4	The Competition Between Winnipeg and Calgary	19

1.0 INTRODUCTION

Most theory treats urban growth as a problem in the location of production. The factories or mines - the economic base - are assumed to drive the urban economy, with the non-basic activities and population tagging along behind. Whether one thinks of Canada as a producer of staples for the world market or as a modern industrialized nation, the urban growth model depends on the economic base. But in Canada, as in most Western nations, tertiary (i.e., non-basic) activities have become the leading source of job creation over the last two decades (Table 1). With primary industries in decline and manufacturing growing very slowly, most of the new jobs appear in the economic sectors.

But where? Do these non-basic jobs simply continue to follow the income generated in the basic economic sectors, or have they taken on a dynamic of their own? Has the expansion of tertiary activity been accompanied by a different locational logic in which these activities develop their own spatial patterns of concentration and specialization, leading perhaps to differences in the growth rates among urban places?

This paper examines the changing location patterns of retail, wholesale and commercial services as revealed in the Census of Merchandising since 1931. After a brief discussion of the data, it looks at the extraordinary rates of growth and change that have occurred in these sectors of the economy, and elaborates some hypotheses about possible impacts on the urban system. This is followed by a description of the spatial patterns of growth, and the major locational change - the shift of distribution activity down the urban hierarchy. The final section discusses some recent trends and possible directions for future change.

2.0 THE DATA

This study uses a rather neglected data set, the Census of

TABLE 1

Labour Force by Major Sectors, 1931-1981 (1000's)

	1931		1941		1951		1961		1971		1981	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Agriculture, Fishing & Trapping	1176.0	29.9%	1133.0	27.0%	880.8	16.7%	673.8	10.4%	506.6	5.9%	518.2	4.3%
Forestry	50.0	1.3	93.8	2.2	129.8	2.5	108.5	1.6	74.4	0.9	100.8	0.8
Mining	72.0	1.8	93.0	2.2	103.8	2.0	119.7	1.9	139.0	1.6	210.0	1.7
Manufacturing	665.5	16.9	917.0	21.9	1313.6	24.8	1408.7	21.8	1707.3	19.8	2219.4	18.5
Construction	250.0	6.4	220.2	5.2	350.9	6.6	416.0	6.4	538.2	6.2	752.4	6.3
Transportation, Utilities, Communications	300.1	7.6	289.7	6.9	450.5	8.5	515.5	8.0	671.1	7.8	935.6	7.8
Trade, retail	425.2	10.8	496.2	11.8	745.9	14.1	990.6	15.3	920.5	10.7	1431.6	11.9
wholesale									348.8	4.0	572.6	4.8
Services - business,	403.7	10.3	444.0	10.6	418.6	7.9	630.7	9.8	958.8	11.1	1749.3	14.6
personal												
- community	206.0	5.2	233.8	5.6	365.5	6.9	627.7	9.7	1082.6	12.5	1728.0	14.4
Finance	92.3	2.4	89.7	2.1	144.0	2.7	228.8	3.5	358.1	4.2	621.1	5.2
Public Administration	116.8	3.0	139.6	3.3	318.3	6.0	530.0	8.2	639.6	7.4	886.6	7.4
Unspecified	169.3	4.3	46.0	1.1	67.6	1.3	158.1	2.4	681.9	7.9	404.3	3.4
Total	3927.2	100.0	4196.0	100.0	5289.3	100.0	6458.2	100.0	8626.9	100.0	12005.3	100.0

Source: Census of Canada, 1971 and 1981.
For earlier years, see Historical Statistics of Canada, Second Edition.

Merchandising that was carried out in parallel with the Census of Population from 1931 to 1971 (since the series was discontinued in 1981 the neglect may continue). Each retail, wholesale, and private sector service (e.g., barber shops, restaurants) establishment was classified and surveyed to obtain data on sales, employees, wages, and inventory. These data were published for a variety of spatial units, including the census divisions used in this study. While comparisons over time can be difficult because of the census to census modifications in the definition of business types, all values have been adjusted (with some difficulty) to fit the 1971 definitions. In the absence of the 1981 Census of Merchandising a variety of other sources have been used to update the attached tables to 1981, although the definitions are not always entirely consistent with the earlier material.

The Census of Merchandising data are well worth examining for the richness of detail they provide about income and lifestyles at a very fine spatial scale. For example, one can contrast the variety of consumer expenditures, the pattern of wages in these sectors, and the nature of retail organization in small towns in Nova Scotia, Quebec and the West. Given the very close relationship between consumer income and retail expenditure one would expect that the 1931, 1941 and 1951 surveys provide an excellent surrogate for spatial variations in income level (unavailable in the regular Census) in a period when rural and urban income levels diverge far more than they do now.

The spatial units used in this analysis are shown in Figure 1, urban-centred regions composed of census divisions grouped around urban places. Each urban region, then, includes a city and its hinterland, within the limitations imposed by the awkwardness of the census division boundaries. These units were chosen because they are reasonably stable over the study period, whereas municipal boundaries change frequently. Also, they are consistent with a number of other studies of growth in the Canadian urban system.[1]

Figure 1

The Distribution Hierarchy: 1981

These spatial units are much larger than those conventionally used in studies of the tertiary sector. With only 124 regions in 1971, ranging from 20,000 to 3,000,000 population, they bypass many of the local interdependencies suggested by central place theory. Most consumers will not travel to adjacent centres on a regular basis. Variations on the supply side of the distribution system should be revealed, however, as well as any specialization in such activities as recreation or business services.

3.0 GROWTH AND CHANGE

The last half-century has witnessed an extraordinary rate of growth in distribution activities, amounting to over 450% of the real value of the combined sales (Table 2). Growth of this magnitude gives plenty of scope for spatial reorganization. Some of the important elements in this growth are portrayed in Figure 2, a population increase of 150% and real per capita income increase of over 350%. It is the latter that largely accounts for the expansion of the tertiary sector during the study period; any spatial variation in that income growth will be reflected in the distribution system. The growth in automobile ownership per capita (300%) is a product of the increased level of income, but also indicates the relaxation of travel constraints for consumers. The intensification of transportation and communication networks linking the urban regions provides an increased opportunity for spatial specialization.

Note that the growth in retail sales has not been fully translated into growth in the number of stores or jobs. Over the study period the average retail store has increased in size (sales/store) by 300%, so that in 1971 there were only 45% more retail outlets than there were in 1931. Increased operating scale and various technical improvements have also improved employee efficiency (sales/worker) by 140 per cent. The fundamental parameters of threshold (the minimum sales required to support a

TABLE 2

The Growth of Distribution Activity

Retail	1931	1971	1931-71 Growth Rate	* 1981
Stores	107,800	155,600	44.3%	-
Sales ($1971)	5,600	31,500	462.5	39,900
Employment	308,500	727,100	133.7	954,600
Sales/Store	51,600	202,400	292.2	-
Sales/Worker	18,000	43,300	140.6	35,200
Services				
Stores	45,200	103,300	128.5	-
Sales ($1971)	800	7,200	800.0	-
Employment	133,800	547,300	309.0	1,024,500
Sales/Store	17,600	70,100	298.3	-
Sales/Worker	6,000	13,200	120.0	-
Wholesale				
Stores	25,300	39,900	57.7	55,800
Sales ($1971)	6,700	33,600	401.5	59,500
Employment	126,500	325,000	156.9	541,800
Sales/Store	263,300	842,900	220.1	1,066,300
Sales/Worker	52,700	103,500	96.3	109,400
Combined				
Stores	178,300	298,800	67.6	-
Sales ($1971)	13,100	72,300	451.9	-
Employment	568,800	1,599,400	181.2	2,520,900

Notes: *1931 and 1971 values from Census of Merchandising; 1981 values estimated from a variety of separate sources, with slightly differing definitions.

Figure 2

Growth of the Canadian Market

store) and range (the maximum trade area defined by transportation costs) in the distribution system of 1981 differ from those of 1931. What kinds of urban places will benefit?

One of the most interesting dimensions of change in the distribution sectors has been the rapid concentration of corporate ownership. Over 60 per cent of Canada's non-automotive retailing is now controlled by less than 1000 retail chains, operating within networks of shopping plazas built by a couple of dozen development firms. Such names as Dylex, Comark, Canadian Tire, Cadillac-Fairview, Bramalea and others are threatening the old titans - Eaton's and The Bay. You could assemble in one room all the main movers and shakers in Canadian retailing - enough people to control at least half the sales. Given the rapid expansion in tertiary activity, even a modest shift in the locational priorities of these firms could have a sizable effect on the settlement system. Are they centralizing or decentralizing their activities, defining new regional distribution centres, focusing on larger or smaller markets?

In short, the magnitude and scope of change in the tertiary activities studied in this paper suggests that there could well be sufficient spatial reorganization to generate differential growth rates across the urban system - if new kinds of location criteria are introduced. The sections to follow first examine the composition of this growth in terms of retail and service groups, then the spatial patterns of growth in general, and finally separate out the growth due to increased demand from that due to the internal reorganization of the industry.

4.0 THE BUSINESS GROUPS

One of the major changes in the distribution system over time occurs in the proportion of sales in the various business types, as shown in Table 3. These groups contain stores selling similar products, and thus with similar operating characteristics and location requirements. The variation in growth among groups reflects the evolution of both consumer

TABLE 3

Differential Growth by Commercial Group
(Sales in 1971 Dollars)

Retail	1931	1941	1951	1961	1971	1971/1951	1981
Food	$1,406.4m	1,944.5	3,479.7	5,729.6	8,186.2	2.35	10,371.0
General	1,487.8	1,794.8	2,719.5	3,622.4	5,383.7	1.98	6,335.6
Automobile	895.6	1,620.7	3,986.4	6,136.8	9,158.3	2.30	11,848.9
Clothes	577.2	773.5	1,188.6	1,552.7	2,081.3	1.75	2,215.3
Furniture	429.5	517.3	1,054.2	1,466.4	2,027.1	1.92	1,320.4[c]
Misc.	760.7	954.2	1,565.2	2,427.1	4,662.7	2.98	7,813.0
Total	5,557.2	7,605.0	13,993.6	20,935.0	31,499.3	2.25	39,906.3
Services							
Amusements	120.6	144.5	276.2	336.9	693.8	2.51	n.a.[d]
Personal	180.9	254.2	344.4	633.5	805.5	2.34	n.a.
Business	28.7	50.0	121.2	397.0	731.3	6.03	n.a.
Hotels, Restaurants	496.7[a]	721.8	1,389.4	2,192.7	3,944.7	2.84	n.a.
Misc.	59.4	71.5	91.8	407.4	1,066.8	11.62	n.a.
Total	886.4	1,240.0	2,223.0	3,967.5	7,242.1	3.26	n.a.
Wholesaling	6,660.3[b]	12,381.0	20,085.5	22,595.8	33,630.7	1.67	59,479.5

Source: Census of Merchandizing, 1931, 1941, 1951, 1961, 1971; 'Retail Trade'; Catalog, 63-005; 'Wholesaling', catalog 63-226

Notes: [a]Hotels revenues estimated for 1931.
[b]Only partial coverage of wholesalers in 1931.
[c]Definition of furniture group changed between 1971 and 1981.
[d]No comprehensive survey of service activity is currently available.

wants and income (e.g., the rapid growth of the automotive group) and the internal organization of the distribution system. For example, the general retail category includes both the rapidly disappearing country general store and the urban department store. To the degree that each of these groups maps out a distinctive urban pattern, these differential rates of growth will be reflected in the urban system.

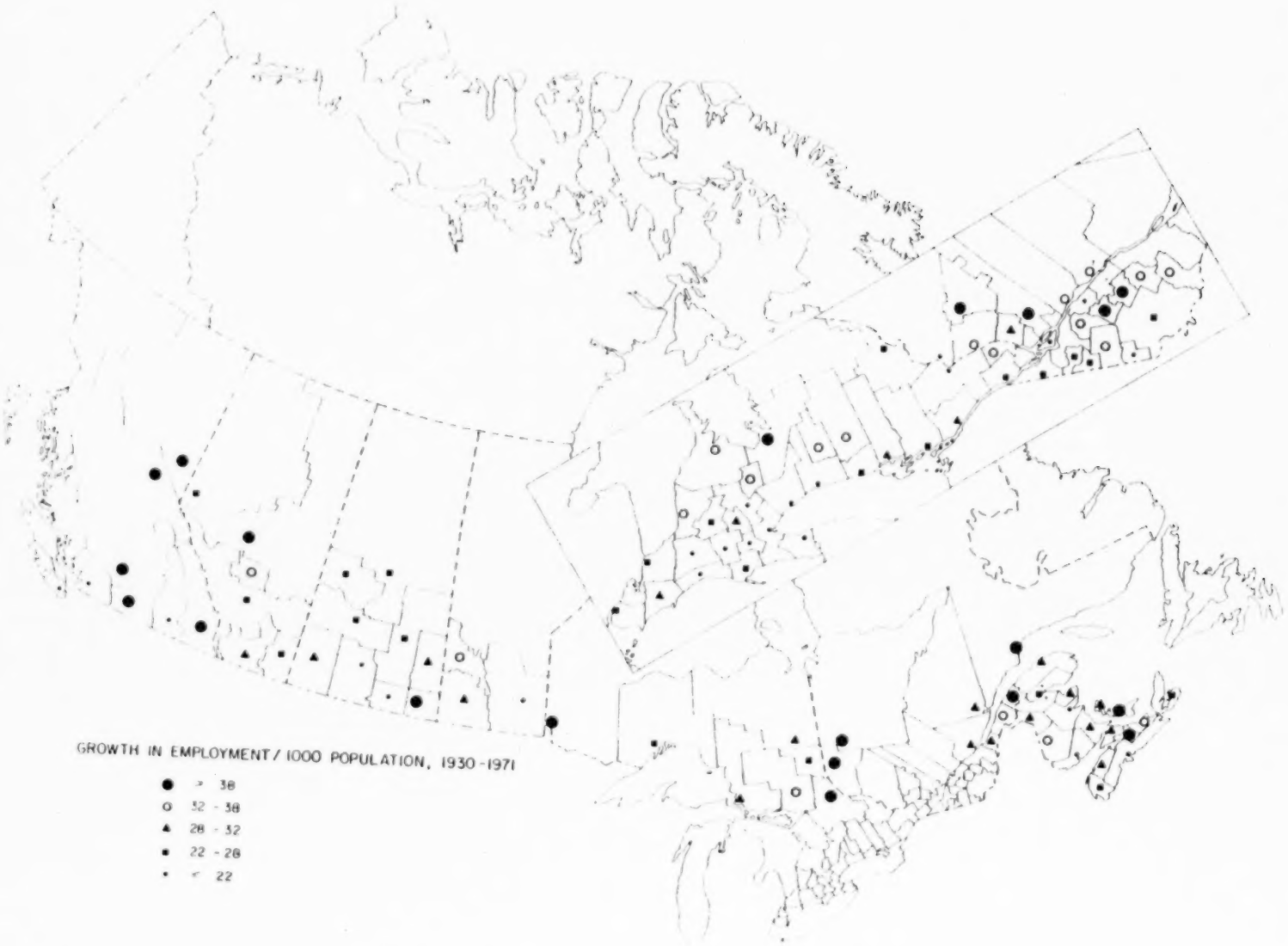
The most spectacular growth in recent years has occurred in the services, which now employ as many people as the retail sector. Note that this table excludes some business services such as lawyers and various consultants because they were excluded from earlier censuses. As a result the office phenomenon will be underestimated. Recreation centres are identified by high concentrations of restaurants and hotels (the hospitality industry). Wholesaling, traditionally a key component of the larger regional centres, now plays a lesser role within the distribution system as a whole.

5.0 THE SPATIAL PATTERN OF GROWTH

The three distribution sectors, retail, wholesale, and private services, have quite distinctive modes of operation. To some degree wholesale sales duplicate retail sales in that they both depend on the same consumer expenditure. Store size and sales per employee levels are much higher in wholesaling. In the service activities, in contrast, sales per employee and average sales per establishment are much lower. This variability leads to the use of employment as the common measure of distribution activity, and the most useful measure of impact on the urban system. In addition, the enormous range in population size of urban regions requires an adjustment to per capita values. Employment/population is used to compare distribution activity in time and space. Figure 3 presents the increment in distribution employment per capita from 1931 to 1971 (i.e., $E/P_{71}-E/P_{31}$) to show how the specialization in distribution activities has changed. No data were available for Newfoundland in 1931,

Figure 3

Growth of Distribution Activity: 1931-1971



and in B.C it was necessary to use the pre-1971 set of 10 census divisions.

While the map does not identify the individual urban places, Figure 1 provides some reference points. The slowest growth in employment per capita occurs in the largest centres, such as Montreal and Toronto. Those regions with the lowest initial concentrations of distribution activity - especially B.C., Quebec, and the economically depressed Atlantic provinces - show a relatively rapid growth. All three sectors - retail, wholesale and trade - appear to have participated in these trends. The overall effect is to reduce the variance in the level of distribution activity across the urban system. Smaller, peripheral places and poorer regions have achieved incomes and adopted lifestyles and patterns of consumption like the largest cities. Over this forty year period, then, it appears as if distribution activity has shifted down the urban hierarchy.

6.0 CONVERGENCE OF THE RETAIL HIERARCHY

The growing similarity in distribution activity at all levels in the retail hierarchy is demonstrated by a case study of four places in Southern Ontario (Table 4). In 1931 Toronto (population one million) had almost three times as much distribution employment per capita as Goderich (population five thousand). By 1981 the values were within 25 per cent of each other. The convergence is first evident in the retail groups, now almost identical at all locations, and then affected services and wholesaling. The latter is now the main remaining element differentiating employment structures across the urban hierarchy.

The shift in employment towards the smaller centres within the urban system undoubtedly helped these places to survive during a period of rapid metropolitan growth. How far the trend extends to even smaller centres below the spatial scale observed here is uncertain, although places below a threshold of 1000 persons have had much lower rates of population growth over the study period.

TABLE 4

A Case Study of Convergence of Distribution Activity

		Employment/Population						
Toronto	Population 1931 (1,000,000)	1931	1941	1951	1961	1971	1981[a]	(est.)[b]
Retail		49.1	51.3	57.1	53.8	34.9	63.3	(44.0)
Service		18.4	22.5	26.1	35.5	31.6	76.8	(43.9)
Wholesale		27.2	31.3	32.1	26.2	24.2	34.9	(34.1)
Total		94.7	105.1	115.3	115.4	90.7	175.0	(122.0)
London	(70,000)							
Retail		36.7	36.1	43.9	52.3	37.5	61.4	(48.6)
Service		14.2	16.2	19.5	25.3	25.9	61.9	(44.4)
Wholesale		15.6	16.4	20.2	19.3	17.1	26.9	(24.5)
Total		66.6	68.6	83.6	96.9	80.4	150.2	(117.5)
Chatham	(10,000)							
Retail		31.5	33.4	39.7	41.3	37.7	55.3	(48.5)
Service		6.7	12.0	17.4	18.9	22.1	41.9	(28.7)
Wholesale		6.5	11.3	15.4	15.9	14.0	20.8	(26.7)
Total		44.7	56.6	72.5	76.1	73.8	118.0	(103.9)
Goderich	(5,000)							
Retail		22.5	26.4	30.2	33.5	35.2	50.0	(46.1)
Service		5.3	7.1	10.6	11.0	19.2	40.6	(32.3)
Wholesale		6.6	7.2	9.7	10.3	13.1	24.7	(19.4)
Total		34.4	40.7	50.5	54.9	67.5	115.3	(97.8)
Toronto/ Goderich Ratio Totals		2.75	2.58	2.28	2.10	1.34	1.52	1.24

Urban-central regions: Toronto = Toronto, Peel, York countries: The city in 1930.
London = Middlesex: The city in 1930.
Chatham = Kent
Goderich= Huron

Notes: [a] from 1981 Census of Population.

[b] assumes constant relationship between Census of Merchandising and Census of Population employment estimate, 1971-1981.

Table 5 provides additional evidence of the convergence. For each census cross-section an equation was fitted:

$$\text{Log}_{10} \text{ (Distribution Employment)} = A + B \text{ Log}_{10} \text{ (Population)}.$$

The first column in the Table shows the evolution of the regression coefficients 'B' over time. A value of B equal to one means that tertiary employment was evenly dispersed among all levels in the urban hierarchy. Values greater than one, as shown here, suggest concentrations of activity in the largest centres. For example, if B equals 1.1, and city i is 10 times larger than city j, the distribution employment would be 12.5 times greater. If B equals 1.2, the ratio soars to 15 times.

Over time, the concentration in larger places, as measured by the B parameters, have declined rapidly, especially since 1951; a measure of the convergence noted above. The number of jobs created in smaller centres as a result of this spatial reorganization is substantial. Toronto and Montreal are essentially unaffected by these parameter changes, but a city of 100,000 would have its distribution employment increased by fifty per cent in this fashion (in addition to normal growth), adding 5000 jobs in these sectors over the study period.

Part of the explanation for these changes must lie in the growing similarity of rural and urban incomes over the study period. In order to control for this factor, a second equation was fitted for the three most recent census cross-sections, when a measure of income per capita was available. The results are given in the second and third columns of the Table. While the city-size effect was reduced to approximately one half (e.g., 1.007 instead of 1.151 in 1961), there is still evidence of hierarchical convergence over time.

Several factors contribute to the convergence. On the demand side there has been a diffusion of big-city lifestyles down the urban hierarchy,

TABLE 5

Distribution Employment and City Size
(Regression Parameters for the Relationship $E = A\ (Population)^{B}$
and $E = A\ (Population)^{B_1} \cdot (Income/Capita)^{B_2}$

Year	First Equation	Second Equation	
	B	B_1	B_2
1931	1.247	not available[1]	[2]
1941	1.215	not available	
1951	1.217	not available	
1961	1.151	1.077	0.670
1971	1.053	1.036	0.360
1981	1.098	1.054	0.712

and a substantial decline in the number of farm households. On the supply side it is apparent that wholesaling activities have dispersed out of the traditional rail-junction distribution centres (as a tour of Winnipeg indicates) into smaller places that are well served by highway networks.

Perhaps the most theoretically appealing argument involves the changing threshold requirements of distribution activities. We know from Figure 2 that the average per capita income has increased by 350 per cent. That means that even if a community doesn't grow in population, retail sales should grow substantially, since most of that increased income is converted into retail and service activity. At the same time the size (in terms of sales) of stores has grown so that the threshold size - the minimum level of sales required to support the store - has increased slightly more slowly than the rate of income growth. As a result a greater variety of retail activities can now exist in a smaller centre.

Whatever the explanation, the patterns identify two important phenomena that have not received sufficient attention: the remarkable overall increases in the real incomes and standards of living for all Canadians over the last half-century, and the equally dramatic equalization of lifestyles in urban and rural areas. The Census of Merchandising data make it clear that to live in Toronto or Winnipeg even a generation ago was to live in a completely different world from Orillia or Yorkton. And that is no longer so.

7.0 RECENT TRENDS

In order to update this study to 1981 I obtained a special data tabulation of employment by Standard Industrial Classification code from the 1971 and 1981 Census of Population. In order to examine the patterns of change an equation of the form

$$dE/E = A + B_1\ dP/P + B_2\ d(Y/P)/(Y/P) + b_3\ \log_{10}(P)$$

where P stands for population and Y for income, was fitted to the employment growth rate 1971-1981 for each of the business groups listed in Table 6. The goal was to identify the contribution of various facets of market growth (i.e., population and income per capita) and to see whether a residual spatial restructuring effect remained.

The first column of regression coefficients in Table 6, almost all greater than one, suggests that distribution activity responds disproportionately to population growth. A growing city achieves a competitive advantage over its neighbours as the spatial extent and penetration level of its trade area increases. Slow-growth cities see their trade areas eroded. Figure 4 indicates that over the last decade, every surge of growth in Calgary has had a negative effect on Winnipeg's role as a distribution centre.

The second column of coefficients, almost all less than one, indicates the less than proportionate response of distribution employment to increased consumer income. Higher income households tend to divert consumption towards non-store expenditures - taxes, savings, housing, or travel.

The values for B3, the regression parameter for population size, will be negative if growth is greater in smaller centres, but positive if activity is shifting towards larger places. Both values are observed here. Most retail groups continue to disperse down the urban hierarchy. Most service and wholesale activities, however, have grown more rapidly in larger centres in the last decade; so that, in aggregate, the total distribution activity has remained just about constant with respect to the urban hierarchy over the last decade. If the services groups continue to grow more rapidly than retailing activity, a long-standing trend in favour of smaller places will be reversed.

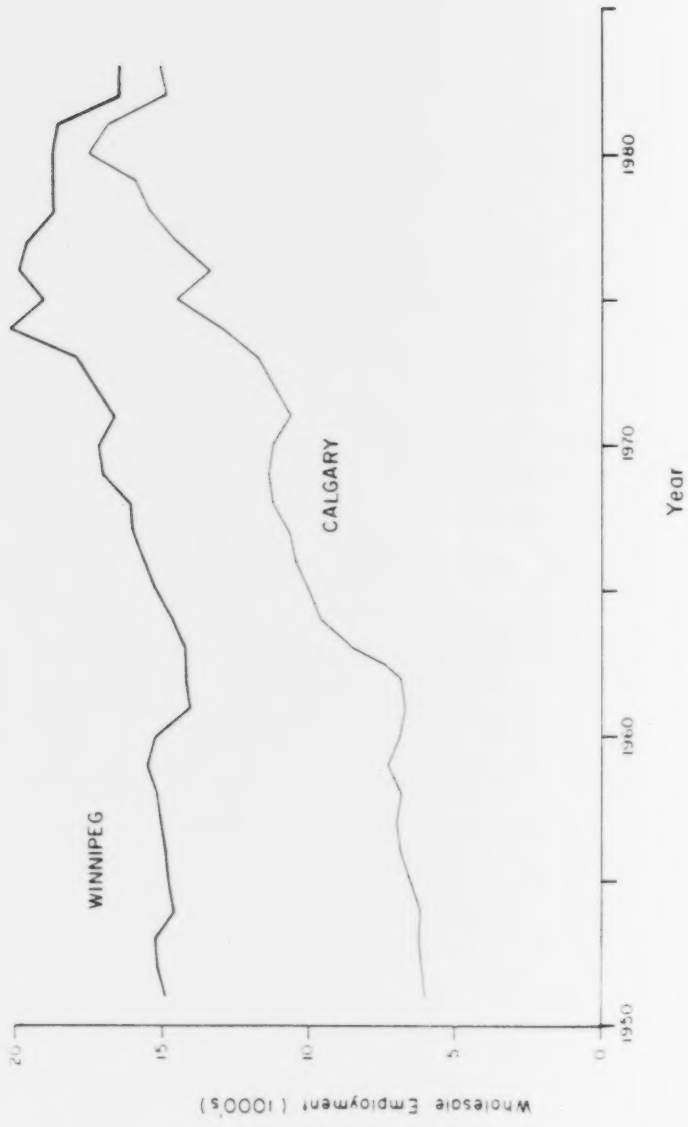
TABLE 6

Growth and the Urban Hierarchy, 1971-1981
(Regression[a] Coefficients)

Dependent Variables	% Growth Population	% Growth Income/Capita	Log 10 Population	R^2 (adjusted)
% Growth in Employment in	B_1	B_2	B_3	
1. Food	1.321	0.394	-0.096	0.386
2. General	1.784	0.784	-0.151	0.405
3. Auto	1.123	0.344	+0.185	0.188
4. Clothes	1.033	1.074	+0.185	0.188
5. Hardware	1.686	0.590	-0.080	0.192
6. Miscellaneous	1.426	0.858	-0.106	0.276
All Retail	1.387	0.386	-0.037	0.692
1. Amusements	1.434	0.158	+0.007	0.106
2. Business	2.696	1.339	+0.119	0.391
3. Personal	0.860	-0.294	+0.064	0.446
4. Hospitality	1.519	-0.090	+0.163	0.404
5. Miscellaneous	0.778	0.972	-0.260	0.058
All Services	1.750	0.102	+0.189	0.720
Wholesale	1.577	0.403	+0.022	0.331
Total	1.558	0.269	-0.020	0.761

Notes: [a] $\frac{dE}{E} = A + B_1 \frac{dP}{P} + B_2 \frac{d(Y/P)}{(Y/P)} + B_3 \log_{10} (\text{Population})$

Figure 4
The Competition Between Winnipeg and Calgary



The relative weakness in the levels of explanation (the r^2 values in the fourth column) suggest that some kind of spatial reorganization is occurring in the distribution system in addition to the changes on the demand side - although the aggregate retail and service models are quite respectable. The residuals from these equations were scanned for signs of declining and increasing specialization, but without much luck. The largest negative residuals for wholesaling occur in Western Canada, where the distribution response lags behind the growth in demand. The positive residuals, conversely, were found in those regions where there has been a long term growth trend in distribution activity, particularly Quebec province outside Montreal. Some traditional regional centres - Winnipeg, Kingston, and Saint John - were over-predicted.

The 'Headquarters' city, represented here by a concentration in business services (this part of the analysis includes them all), is very much a product of the seventies, when enormous numbers of jobs were created in these activities. Most growth occurred in the largest urban regions: 34,000 in Montreal, 48,000 in Toronto, 18,000 in Vancouver, and 7,500 in each of Calgary and Edmonton. These reflect predominantly high order functions, as the regression parameters suggest. Nonetheless, some big cities did better than others. The winners included Ottawa, Oshawa, Calgary and Hamilton. Among the losers were Montreal (about 10,000 fewer jobs than predicted), St. John's, Quebec and Vancouver. Hotels and restaurants, the 'hospitality' group were initially hypothesized to favour semi-rural recreation areas, but these activities prefer big city expense accounts over rural retreats.

The sheer magnitude of growth in the tertiary sector means that even modest shifts in location can have substantial impacts. Almost 2000 jobs were added in St. John's, for instance, in each of business services and hotels/restaurants. Perhaps more to the point, one-third of the predicted jobs never materialized. Looking at all distribution employment, only Halifax performed as well as predicted in the Atlantic provinces. All the

others - Saint John, Moncton, and St. John's lost ground. In Quebec, Montreal managed to respond about as predicted, and most of the smaller places did even better, continuing a long-run process of catching-up with the rest of the country. Ottawa and Sudbury did better than expected in Ontario. The former is taking on an expanded role within its region. The latter did not decline as rapidly as its market. In the West, Winnipeg and Regina lost overall, and so did Vancouver. In a relative sense, Saskatoon, Calgary and Edmonton gained on the rest, though in general the growth in demand outran the expansion of facilities. There are very powerful lag effects in the distribution system.

8.0 THE FUTURE

So far there is relatively little evidence of spatial specialization in the distribution roles of Canadian cities - such as recreation centres, perhaps, or a growing business service function. Variations in the hierarchical concentration predominate. Nonetheless the possibility exists for specialized roles for different urban places in the future.

Most of these activities are now organized into large multi-locational networks of facilities - chains of stores, service stations, and tax consultants. Up to now such enterprises have largely replicated the location decisions of individual entrepreneurs, but some interesting trends are emerging. First, the proportion of employees in these sectors who are actually in contact with customers is declining. Only 45% of retail employees were in sales occupations in 1981, compared with 49% in 1971. The rest of them are managers, typists, accountants, warehousemen, etc. Second, the major current innovations in these sectors are computer systems. Each branch outlet can now be directly linked to the head office or warehouse. Suddenly half the staff are essentially footloose in that they can be located anywhere in the system - in the store or at headquarters, or in some isolated data centre in an obscure suburb or small town. While large central locations will likely continue to be attractive for these

activities, one cannot be sure.

In the meantime, it is clear that even modest changes in the orientation of distribution employment to the retail hierarchy has significant implications for urban growth rates. Thousands of jobs are affected, and the range in response of distribution employment to growth in demand varies widely. Still it is evident that the place to place divergence was even greater in the past. The real key to an understanding of urbanization in most of Canada lies in the changing locational requirements of these activities.

NOTES

1. James W. Simmons, Mysteries of Urban Growth: Cross-Sectional Analyses of the Canadian Urban System, Research Paper No. 114 (Toronto: Centre for Urban and Community Studies, University of Toronto, 1979); James W. Simmons, "Changing Migration Patterns in Canada," Canadian Journal of Regional Science III (Fall 1980): 139-162; and James W. Simmons, "Government and the Canadian Urban System: Income Tax, Transfer Payments, and Employment," The Canadian Geographer XXVIII (Spring 1984): 18-45.

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